Thermostatic mixer for solar systems lower mixed way - S100-S101-S102-S103

Function

The burn-proof thermostatic mixers, series S100-S101-S102-S103, are utilized in domestic hot water heating systems and function in continuous operation.
Their purpose is to maintain a constant temperature in the mixed water conveyed to users regardless of any variations in the pressure or temperature values of the hot and cold water at the mixer inlet, or in the flow meter.
They are also equipped with a burn-proof safety system: this allows the flow of hot water to be shut off automatically as soon as cold water is missing at the mixer inlet.

Article S102 is also equipped with two non-return valves placed at the hot and cold water inlets; their function is to prevent any undesired fluid returns to the system.

Product

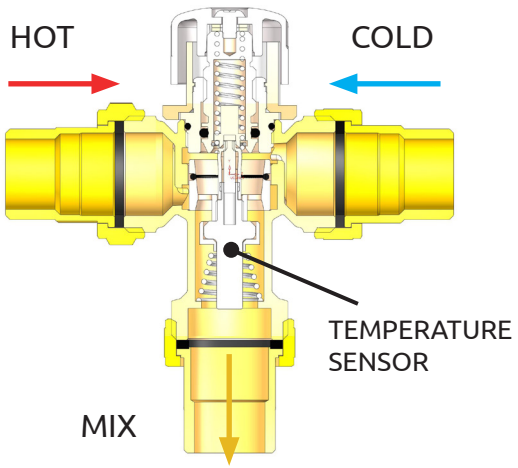
Art.	Code	Size	Connection
S100	93S100AD05	G ½" M	With pipe union
S100	93S100AE05	G ¾" M	With pipe union
S100	93S100AF05	G 1" M	With pipe union
S101	93S101AD05	G ½" M	Female
S101	93S101AE05	G ¾" M	Female
S101	93S101AF05	G 1" M	Female
S102	93S102AE05	G ¾" M	Pipe union + Non-return valve
S103	93S103AD05	G ¾" M	Male
S103	93S103AE05	G 1" M	Male
S103	93S103AF05	G 1"¼ M	Male

Operating principle

Mixer operation is based on the temperature sensor contained inside the mixer, in the mixed water outflow area.

Variations in the expansion of the thermostatic component cause the plunger contained inside the mixer body to slide. This generates correct mixing of the cold and hot water at the water distribution system inlet.

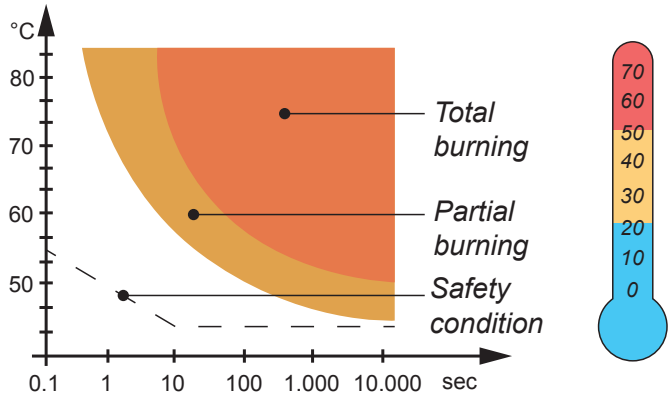
In this way, the mixer automatically maintains the temperature value set, even when there are variations in pressure caused by the drawing of hot and cold water by the various users, or when there are variations in the temperature of either the cold or hot water at the inlet



Burn-proof device

In domestic hot water heating systems with accumulator, water must be kept at a minimum temperature of 60°C in order to totally prevent the growth of the bacteria that causes a very dangerous infection called Legionnaire's disease.

Water cannot be used directly at this temperature because it can cause burns. The installation of a thermostatic mixer is recommended to ensure that water is safe to use. The mixer keeps the preset value constant when there are variations in temperature and pressure at the inlet.



The graph at the side of text indicates the degree of burning that can be caused depending on water temperature and heat exposure time. The mixer solves this problem by interrupting the flow of hot water when the flow of cold water is missing at the inlet.

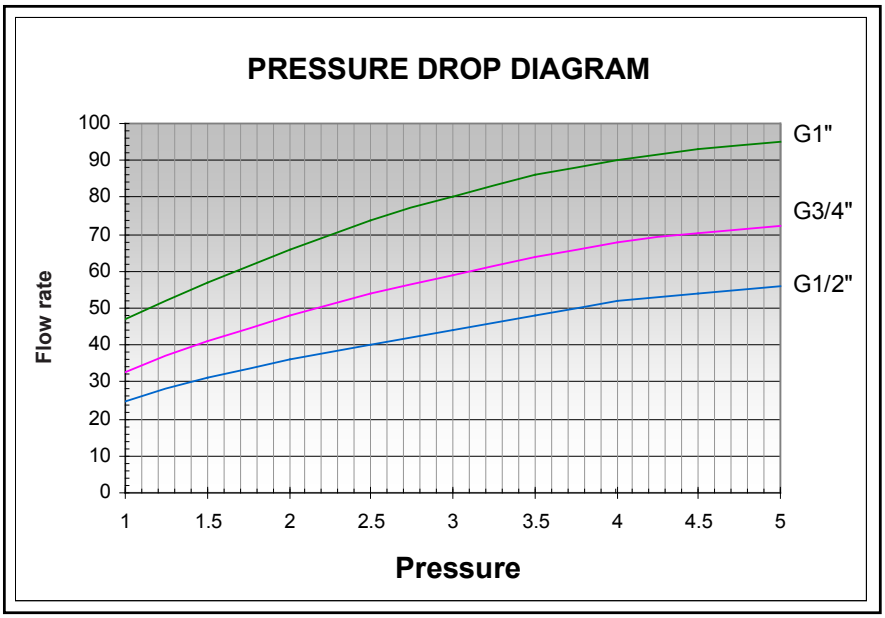
Technical characteristics

MATERIALS	
Body:	Brass CW 617 N - UNI EN 12165
Large screw:	Brass CW 617 N - UNI EN 12165
Springs:	Stainlass Steel
Lock nut:	Grivory
Hand wheel:	Grivory
O-Ring:	EPDM PEROX - (high resistance)

NON-RETURN VALVE MATERIALS	
Body:	Brass CW617N - UNI EN12165
O-Ring:	EPDM PEROX - (high resistance)
Spring:	Stainlass Steel

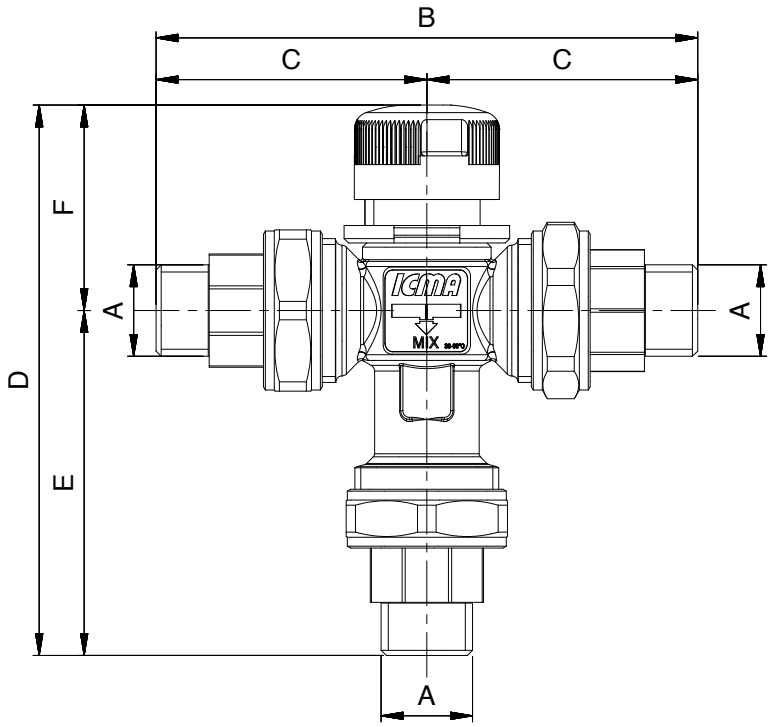
PERFORMANCE	
Fluid used:	water
Max percentage of glycol:	50%
Temperature range:	30-60°C
Factory calibration:	38 ±2°C
Max operating pressure (static):	10 bar
Max operating pressure (velocity):	5 bar
Max temperature at inlet:	100°C
Max ratio between C/F or F/C pressures:	2:1

Hydraulic characteristics



Kv [m³/h]	
G ½"	3.8
G ¾"	4.6
G 1"	6.8

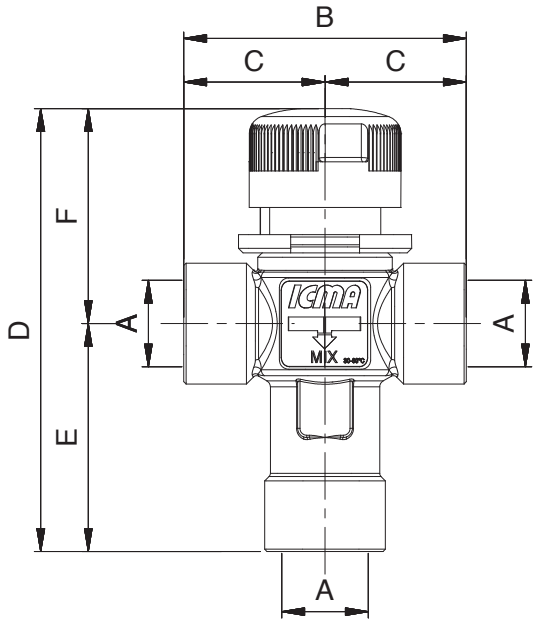
Dimensions (Art. S100 - S102)

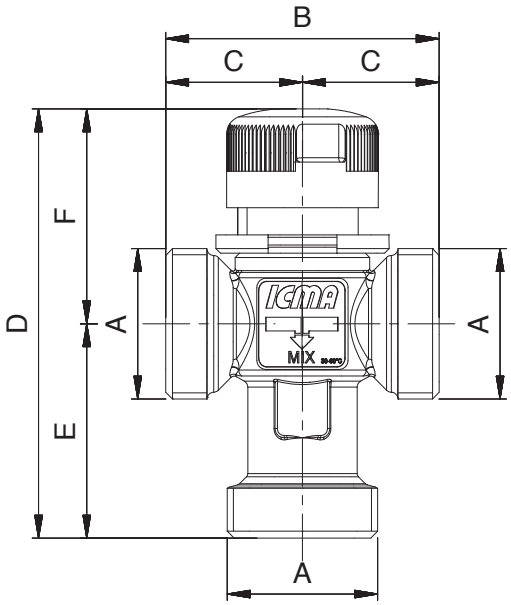


Code	93S100AD05	93S100AE05	93S100AF05
A	1/2" M	3/4" M	1" M
B	124	124	144
C	62	62	72
D	125	125	147
E	80	80	89
F	45	45	58

Code	90S102AE05
A	3/4" M
B	127
C	63,5
D	125
E	80
F	45

Dimensions (Art. S101-S103)





Code	90S101AD05	90S101AE05	90S101AF05
A	1/2" F	3/4" F	1" F
B	62	66	84
C	31	33	42
D	97	100	118
E	50	53	60
F	47	47	58

Code	90S103AD05	90S103AE05	90S103AF05
A	3/4"M	1"M	1" 1/4M
B	66	60	75
C	33	30	37,5
D	98	94	112
E	50	47	54
F	48	47	58

Installation

Make sure that pipes are free of impurities before activating the mixer to avoid equipment malfunction.
Filters should be installed at the inlet of the water distribution system.

On the thermostatic mixer body there is a label indicating:

- hot water inlet
- cold water inlet
- mixed water outlet

Temperature adjustment

The temperature is set by turning the knob with graduated scale located on the mixer.

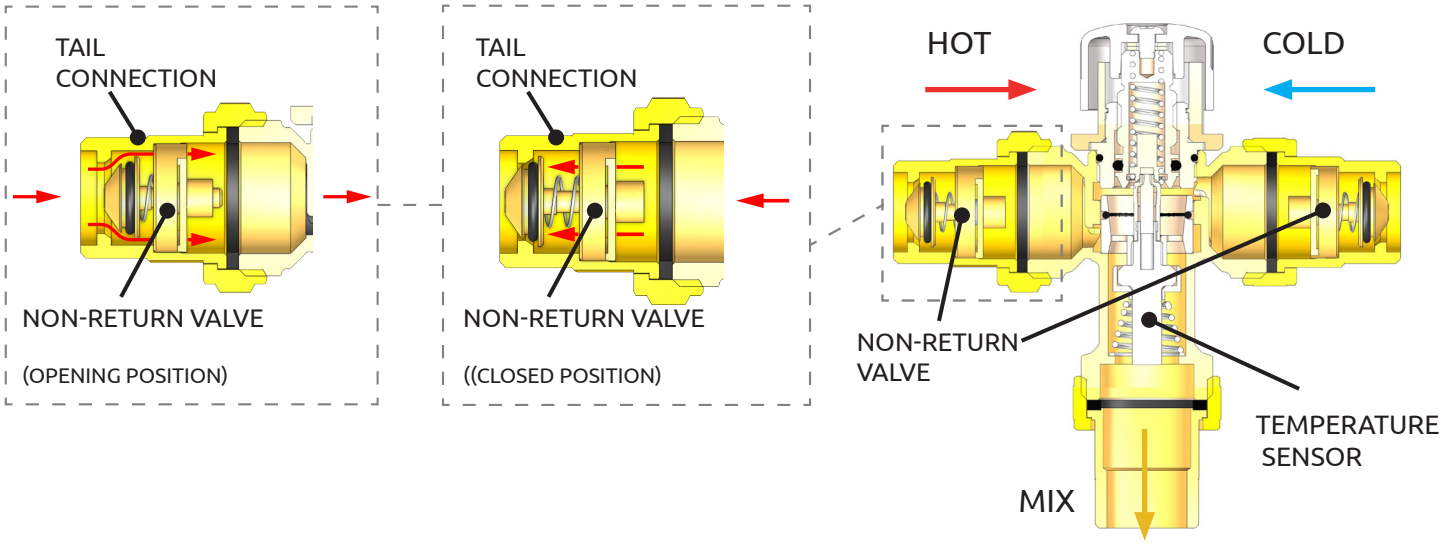
Reference conditions:
Hot T: 68°C
Cold T: 13°C
Inlet pressure: 3+3 balanced Bar

ADJUSTMENT RANGE

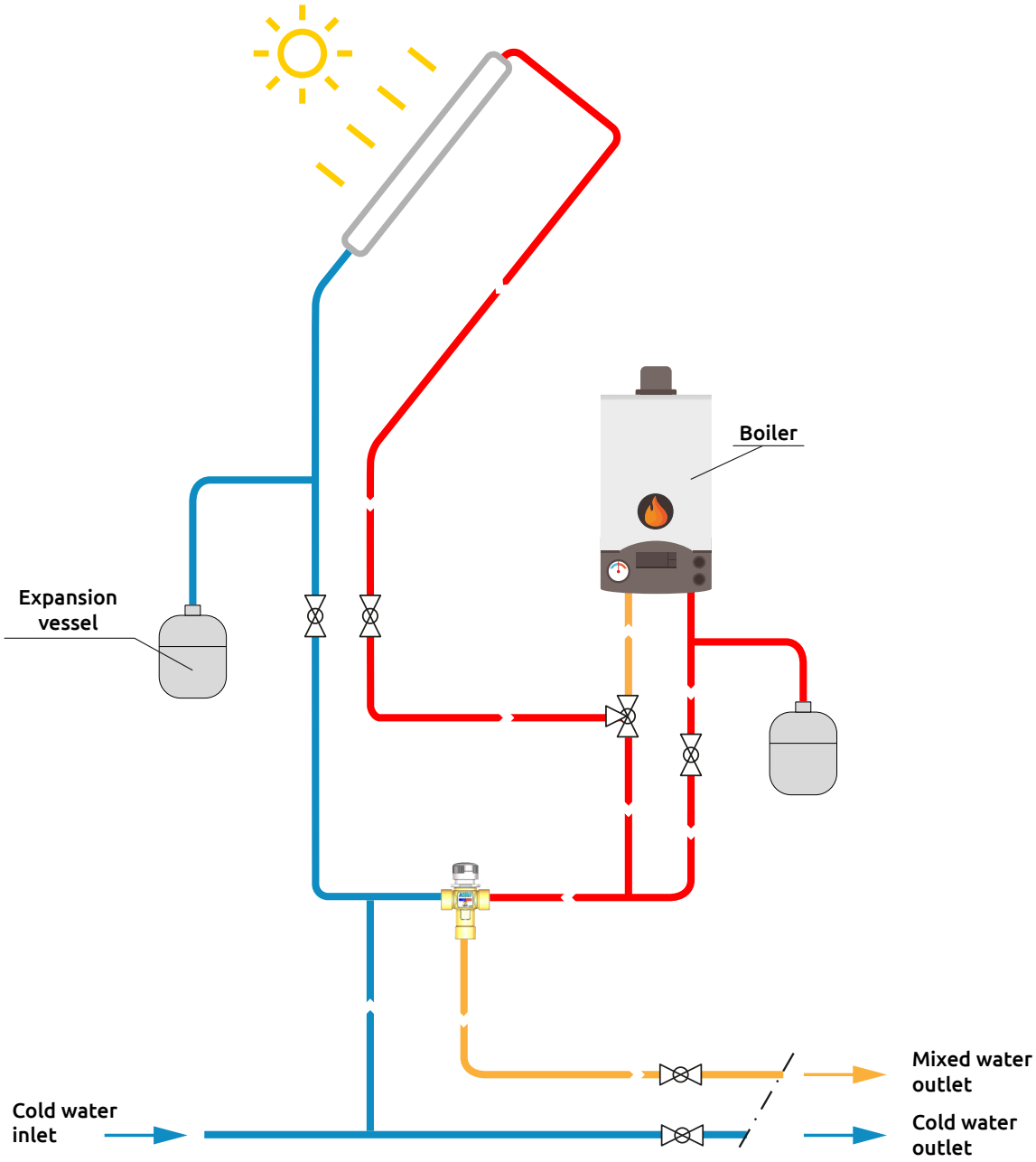
Setting	1	2	3	4	5	6
°C	30	35	40	45	50	60

Non-return valve

Non-return valves should be installed on systems equipped with mixers in order to avoid undesired fluid returns. Item S102 is fitted on a non-return valve, one at the hot water inlet and another at the cold water inlet.



Application diagram



Safety

To keep internal components in good condition, avoid using detergents that contain solvents when cleaning the equipment.

Carefully read and observe the assembly and commissioning instructions before actuating the equipment in order to avoid accidents and breakdown in the system caused by improper use of the product. You are reminded that warranty rights will be lost should any unauthorized changes be made in the equipment or should tampering occur during its assembly and construction. Make sure that all safety precautions are followed. Be sure to call on qualified personnel for assistance when there is doubt with regard to use of the equipment and to making changes in parameters, or functions.